Don Bosco Institute of Technology
Mumbai - 400070
Report on Workshop 'Coding Arduino'

Title: Workshop on '**Coding Arduino**'

Date : 29th March 2022

Time : 3:00 PM to 5:00 PM

Venue : Comp lab-3

Participants: SE Computer students (60)

Resource Person: ACM Team

Organizing Department / Committee / Authority : Department of Computer Engineering

Faculty Coordinator: Ms. Sejal M Chopra

Objective:

- To learn the foundational principles that make the Arduino work, such as circuits and electricity.
- To become familiarised with the physical components of the Arduino, like resistors and sensors.
- To acquire knowledge on the basics of the Arduino programming language and how to control inputs and outputs.
- To gain understanding on how Arduino can be integrated in work and projects.

Outcomes:

- To understand how to program Arduino using code written in Arduino IDE.
- To gain knowledge about the hardware implementation of Arduino along with hands-on experience of working with Arduino.
- To learn how to use sensors and various other components using a breadboard and to build innovative projects with Arduino.

Report:

The workshop was organized by Ms. Sejal Chopra. ACM's hands-on ***ARDUINO*** workshop was held on the 29th of March, 2022 from 03:00 pm to 05:00 pm in the Comp lab-3. The primary purpose of this workshop was to provide students with the fundamental knowledge of the Arduino processor along with hands-on practice. Arduino is an open source development board used by developers and hobbyists for creating projects and prototypes. It has a vast collection of supporting libraries developed by open source users across the world. Learning this platform will help students in rapid prototype development of their future projects. On the basis of these facts the content of the workshop was designed. The workshop was held exclusively for the second-year students of the computer engineering department.

Mr Grejo Joby (ACM - Chairperson) conducted the workshop. Throughout the workshop he made sure all the students got a clear understanding of what he was teaching. He commenced

the workshop by giving a general introduction on Arduino, he informed the students that Arduino consists of both a physical programmable circuit board or microcontroller and a software, IDE (Integrated Development Environment) that runs on the computer and that it is used to write and upload computer code to the physical board. He first explained the hardware aspects of the Arduino, followed by a crash course on programming. He started by explaining the components of Arduino uno and its key parts with the help of a detailed powerpoint presentation. Followed by that, he discussed its various functions. He explained setup n loop functions. Further On, he spoke about its applications. Later, he explained the interfacing of an ultrasonic sensor with Arduino.

Advancing, he began with the hand-on workshop. Students were divided into groups of six and each group was provided with a volunteer from the final year to help them out when needed and solve their queries and doubts. Mr Grejo gave a detailed explanation and demonstrated the basic working of a blinking LED, the Hello World of microcontrollers and told students to experiment themselves. After which he displayed how to interface an ultrasonic sensor with Arduino and view the distance on the serial monitor by uploading code to the Arduino. Students were told to experiment this as well.

Towards the end of the workshop there was a Q&A session, wherein all the doubts and queries put forth by the students were clarified. Lastly the participants were requested to fill the feedback form which was circulated on the WhatsApp group to ensure that the session was helpful marking the end of the hands-on workshop.

A total of 60 SE students attended the session.

Arduino Workshop Schedule

Introduction to Arduino

Arduino and its variants
What is it?
Components, Pin Diagram, Connections, On board LED's
Introduction to Serial Communication, Baud Rate
Traditional/Default Coding Methods

Python-Arduino Interfacing

Introduction to the PySerial Library and Installation
Basic Python Server Program (LED On/Off)
C++ Listener Program

Components/Interfacing

Breadboard connections
Actuators
Sensors
Shields* (Explanation only)

Python Program 1

Output: LED Power On/Off, Blinking, Patterns using the delay/sleep function

Python Program 2

Input: Proximity Sensor
Output: LED's

Components Required (Per Group)

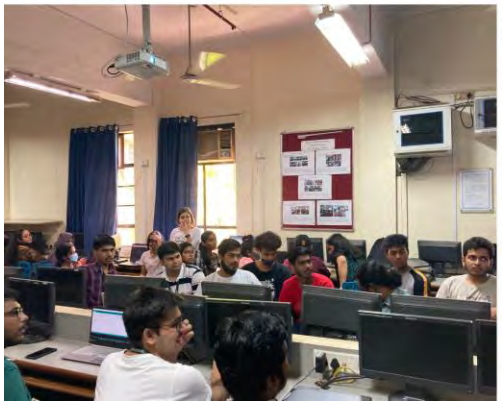
1x Breadboard
4x LED

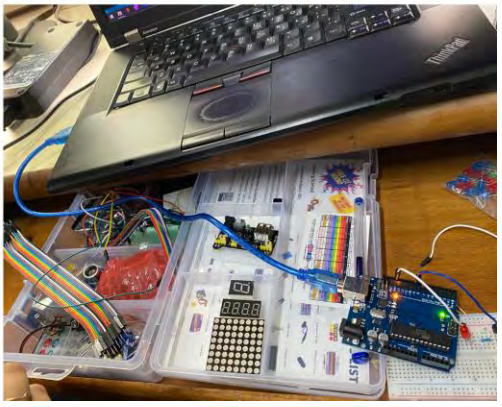
Potentiometer
Cables
Resistors
IR Proximity sensor
Buzzer

Poster:

Pictures:


Acm Student Chapter
Arduino Hand
Workshop




ThinkPad

Attendance:

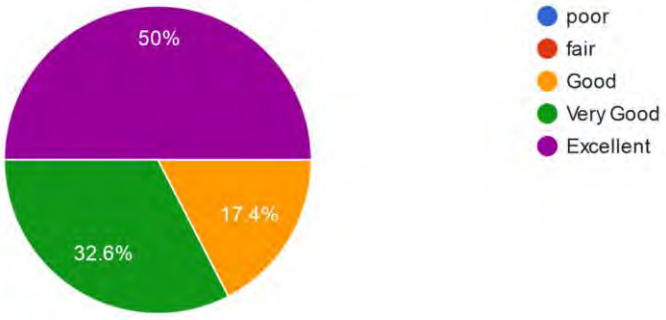
Don Bosco Institute of Technology		
Computer Department		
AY 2021-2022 EVEN SEM- SE (SEM IV)		
Arduino Workshop Attendance		
	Date	29thMar'22
Roll	Name of student	
1	Smriti Sunil	
2	Alvares Andrea Marina	
3	Auxilia Arockiasamy	
4	Avhad Sarvesh Sunil	ABSENT
5	Kaushik Santosh Bedmutha	
6	Chaudhari Raj Chandrakant	
7	Sanika Anant Chaudhari	
8	Declan Crasto	
9	Pratik Daga	
10	Siddharth Dhaigude	
11	Chris D'Souza	
12	Ervin Dsouza	
13	Russell Dsouza	ABSENT
14	Boris Edison	
15	Alan Rosario Fernandes	
16	Alston Fernandes	
17	Nigel Fernandes	
18	Aryaman Gavali	
19	Bipin Dinesh Giri	
20	Sahil Rajkumar Godse	
21	Aryan Gonsalves	
22	Selwyn Gonsalves	
23	Aniket Gupta	
24	Rhea Gupta	
25	Aleron Jaisahroyan	
26	Sakshi sanjay jeughale	
27	Jha Aashish Subhchandra	
28	Noel Jomichan	
29	Grace Lewis	
30	Abhiraj Sanjay Mane	ABSENT
31	Vivek Sunil Maurya	

32	Crezel Savio Mendonca	
33	Sharlene Misal	ABSENT
34	Noel Monteiro	
35	Sahaya Lebisha Nadar	
36	Tiffany Jesus Nadar	
37	Siddhanth Ganesh Naidu	
38	Pandey Ambuj Arvind	
39	Hrishikesh Pramod Panigrahi	
40	Shiab Sajid Patel	
41	Pavaskar Sahil Santosh	ABSENT
42	Pellissery Rehan Joseph	
43	Sarah Devendra Pradhan	ABSENT
44	Purohit Madhavi Satyanarayan	
45	Tushar Purohit	ABSENT
46	Sasha Rebello	
47	Lajos Vijay Rosario	
48	Gaurav Samanta	
49	Shaikh Mohd Sameer Nasim	
50	Shekate Akshay Mohan	
51	Sahil Shelke	
52	Shingre Manish Mangesh	ABSENT
53	Rahul Shrivastav	
54	Ehtesham Siddiqui	
55	Surve Ronak Rajendra	
56	Saurav Sushil	
57	Shrikrishna Laxman Umbare	
58	Vadassery Ansley Shiju	
59	Leona Jolly Varghese	
60	Royce Vaz	
61	Thottam Christie	
62	Khan Shadab Alam	
63	Fernandes Andrea	
64	Ghate Om	
65	Ansari Nashrah	
66	Dharmadhikari Yash	
67	Belhekar Vipul	
68	Madkaikar Siddhesh	
69	Pereira Chris	ABSENT

Feedback Analysis:

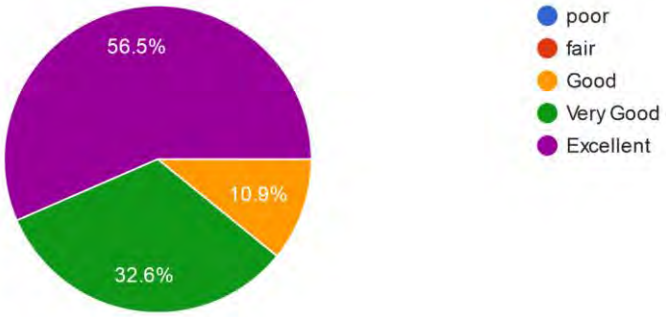
The workshop course gave me a deeper insight into the subject of microcontroller programming

46 responses



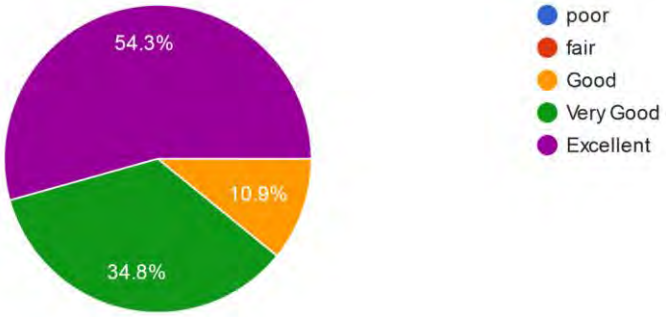
The course was delivered in such a way that it created enthusiasm

46 responses



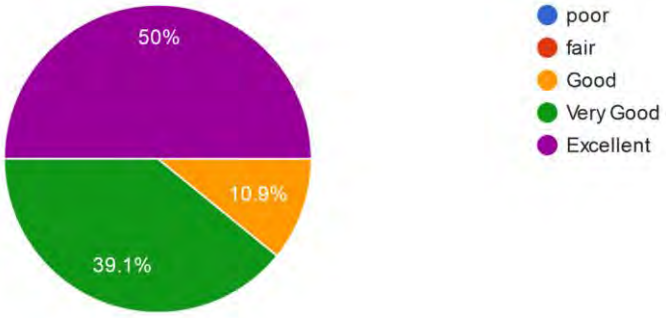
The workshop course content was clearly appending a hands-on with each theory concepts

46 responses



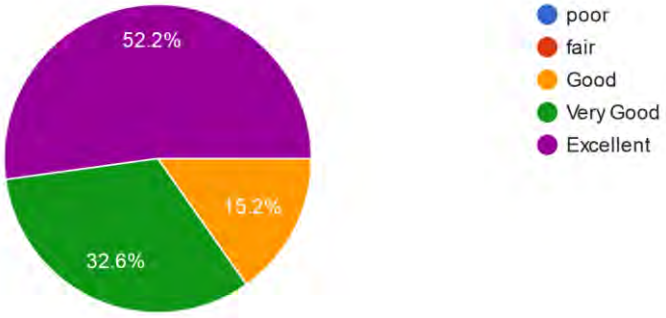
The workshop enthused me to self learn and read beyond the syllabus

46 responses



The workshop course provided me skills and knowledge that are relevant to my professional working

46 responses



Report Prepared by: Ms. Sejal M Chopra
Report Approved by: Dr. Phiroj Shaikh